

PERU: Dept. Ayacucho: Kimpitiriki,⁸ Río Apurímac, 400 meters, nos. 22913, 23053. Dept. Junín: Near La Merced, 1300 meters, no. 23878; Santa Rosa, on Pichis Trail, 650 meters, no. 26200; Puerto Yessup, 400 meters, no. 26369; Puerto Bermudez, 375 meters, nos. 26490, 26597, 26612; El Trionfo, on Río Pichis, 350 meters, no. 26692; Cahuapanas, on Río Pichis, 340 meters, no. 26712. Dept. Loreto: Puerto Leguia, 290 meters, no. 27504; Masisea, 275 meters, no. 26837; Iquitos, 100 meters, nos. 26886, 26893, 26895, 26945, 27096, 27135, 27159, 27278, 27362, 27369, 27380, 27487; Mishuyacu, near Iquitos, nos. 29917, 29957; Peña Blanca, on Río Itaya, near Iquitos, 110 meters, no. 29668; Yurimaguas, lower Río Huallaga, 135 meters, nos. 27565, 27566, 27994, 27997, 28211, 28812, 29061, 29066; Balsapuerto, 135-350 meters, nos. 28158, 28255, 28300, 28325 (wild), 28458, 28586 (wild), 28621 (wild); Lower Río Marañón, 150 meters nos. 29279, 29280; mouth of Río Santiago, *Tessmann* 4447 (in Berlin herbarium; fragment U. S. N. M.).



Fig. 2. Plants of *Lonchocarpus nicou*.

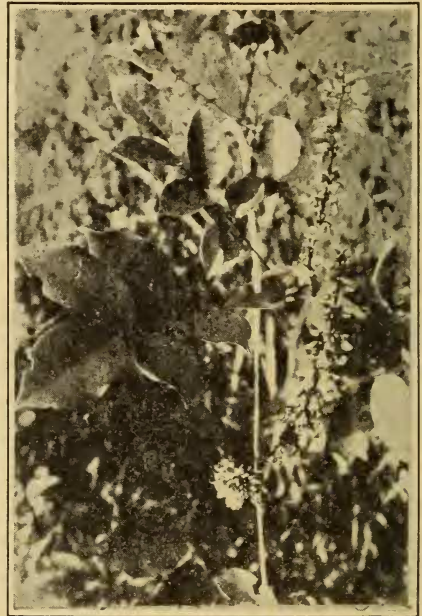


Fig. 3. *Lonchocarpus floribundus*.

BRAZIL: State of Amazonas: Manáos, 25 meters, no. 30026, 30038, 30137, 30177 (apparently wild). State of Pará: Gurupá, lower Río Amazon, no. 30608 (apparently wild); Breves, Amazon Estuary, no. 30576; Pará, no. 30241. State of Matto Grosso: Santa Izabel, *F. Lima* (Herb. Mus. Goeldi 10863).

BRITISH GUIANA: Demerara, *Parker* (in Kew herbarium).

⁸ At this locality alone the name "cube de almidón" was sometimes used, "almidón" meaning starch.

From this list it may be seen that we found the plant most extensively cultivated in the region about Iquitos (100 meters altitude). Many of the plantations contained several thousand trees. Yurimaguas, on the Huallaga River, a few miles above its mouth, is also a center of cultivation. Doubtless this is also the plant used by the natives of eastern Ecuador. Our stops in Brazil were few, but we found *Lonchocarpus nicou*, both in the forest and in cultivation, at Manáos and Gurupá, and in cultivation at Pará. In material recently lent us through the courtesy of the Director of the Royal Botanic Gardens, Kew, England, there is a specimen of a cultivated fish poison from Demerara, British Guiana, that clearly is *Lonchocarpus nicou*.

A more detailed account of South American fish poisons, including descriptions of the native method of use, is in preparation for future publication. At present it seems advisable to mention two other plants, the roots of which serve for poisoning fish.

Along the south bank of the Rio Negro above Manáos we found a large plantation of a second species of *Lonchocarpus*, *L. floribundus* (Killip & Smith 30041). This was a low shrub, 1 to 1.5 meters high, in fine flower and fruit. The roots were of a softer, more porous texture than those of *Lonchocarpus nicou*, but were said to be quite as effective as a fish poison. Samples of these are being analyzed.

At Gurupá, a settlement on the lower Amazon River at the mouth of the Rio Xingú, several plants of a third species of *Lonchocarpus* were obtained, the roots of which were reported as a fish poison even more effective than *Lonchocarpus nicou*, which also is grown in that vicinity. This exceptionally powerful plant had been identified⁹ by Dr. Adolfo Ducke, the Director of the Museu Nacional of Rio de Janeiro as *Lonchocarpus nicou*. Although at the time of our visit, November, the plant was neither in flower nor in fruit, excellent flowering and fruiting material has generously been deposited in the U. S. National Herbarium by Dr. Ducke. Comparison of this with Aublet's description and illustration of *Lonchocarpus nicou* leads us to the conclusion that it represents a distinct species. In this Gurupá plant the leaflets have short tips, not over 1 cm. long, and the fruit is broadly ovate to oblong-ovate; whereas, as already noted, the leaflets of *Lonchocarpus nicou* are long-acuminate (tip 2 to 4 cm. long) and the fruit, as shown in Aublet's illustration, is linear-oblong.

The Gurupá plant may be known as:

⁹ Archiv. Jard. Bot. Rio de Janeiro 4: 88, 89, 139. 1925.